REMARKS

Applicants respectfully request reconsideration of the application as amended.

Please cancel claims 12 and 20 without prejudice. Please add new claims 22-26. Please amend claims 1, 11, 13, 16-18, and 21. Please amend the specification by adding the replacement paragraphs. Applicant respectfully requests the Examiner to accept the Request for a Petition for Revival attached to with this Amendment. Applicant respectfully requests the Examiner to accept the request to approve drawing changes included with this amendment.

1. Objection to the listing of the co-pending application in the specification.

The Examiner states, "Applicant's citations of co-pending application have not been considered by the examiner because applicant failed to supply the actual serial numbers of the co-pending applications. If applicant wishes to have the co-pending applications, applicant should file form PTO-1449 with a request for a citation of the application."

Applicant does not request that the examiner consider the co-pending applications. Applicant submits replacement paragraphs to remove the reference citations to these co-pending applications.

2. The 37 CFR 1.84(p)(5) drawing objection.

The Examiner states, "the drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "22". Applicants submit a proposed new figure 1 which includes

reference sign 22. No new matter was added. Applicant will also submit the proposed new figure 1 to the Official Draftsperson under separate cover.

3. The 37 CFR 1.84(p)(5) drawing objection.

The Examiner states, "The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the pitch riding retainers must be shown or the feature(s) canceled from the claim(s). Although Applicant could show such features, Applicant has opted to cancel claim 20 without prejudice.

4. Claims 11 and 18-21 are objected to for lack of antecedent basis.

The Examiner states, "Claim 18, lines 15-16, 'a generator incorporating a gear' should be changed to --the generator incorporating the gear." Further, the office action states, "Claim 21, line 1, the recitation of 'the ring gear" lacks antecedent basis.'" Further, the office action states, "Claim 11, line 2, the recitation of 'the mounting post' lacks antecedent basis."

Applicant respectfully submits that the elements in claims 11, 18 and 21, as amended, possess proper antecedent basis. Claim 19 depends from independent claim 18. Therefore, applicant submits claims 11, 18, 19, and 21 overcome the objection for lack of antecedent basis for reasons stated above.

5. Claims 16 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner states that the recitations of "if' and an alternative language, "or", in claims 16 and 18 render the claim indefinite because it is not clear whether the second rotor blades have a fixed pitch or a variable pitch.

Independent claim 16, as amended, and independent claim 18, as amended, further define the second rotor blades and pitch relationship. MPEP 2173.05 states that alternative expressions are acceptable as long as nothing inherently ambiguous or uncertain exists about the element. Therefore, the second rotor blades may have fixed pitch or a variable pitch as long as nothing uncertain exists about the element.

Applicant respectfully submits that claim 16, as amended, clearly expresses the second rotor blades and pitch relationship because the words of the claim define the root ends attach to a structure based upon the pitch of the second rotor blades. Alternatively, the root ends of the second rotor blades attach to a drive shaft when the second rotor blades have a variable pitch.

Further, independent claim 18, as amended, clearly expresses the second rotor blades and pitch relationship because the words of the claim define that the root ends of the second rotor blades attach to the external surface. The root ends of the second rotor blades attach to the external surface of the shroud when the second rotor blades have a fixed pitch. Therefore, applicant submits claims 16 and 18 overcome the 35 U.S.C. 112, second paragraph, indefiniteness rejection.

6. 35 U.S.C. 102(b) rejection of claims 1-3, 14 and 16 by Bergey and 35 U.S.C. 102(b) rejection of claims 1-2, 4-5, 11 and 14 by Smith.

The Examiner asserts that claims 1-3, 14 and 16 are anticipated by Bergey. The Examiner also asserts claims 1-2, 4-5, 11 and 14 are anticipated by Smith.

The law requires:

"To anticipate a claim, the reference must teach every element of the claim. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (Manual of Patent Examining Procedures (MPEP) ¶ 2131.)

The present invention as recited in Claim 1, as amended, sets forth a shroud that has a ring gear to drive a generator as well as a nacelle that has a strut to affix the generator. The Examiner states, "However, Bergey, Jr. does not specifically disclose the turbine comprising: a ring gear on the shroud; and a driven gear on the generator and in engagement with the ring gear." (Office Action, Page 6). Further, "Smith does not specifically disclose the shroud system comprising: the shroud including a ring gear for driving at least one generator; and the ring gear being on the internal surface of the shroud." (Office Action, Page 9). Therefore, independent claim 1 patentably distinguishes over Bergey as well as Smith because neither Smith nor Bergey discloses these elements recited in claim 1.

Claims 2-5, 11, and 14 depend from claim 1. Therefore, claims 2-5, 11, and 14 patentably distinguish over Bergey as well as Smith.

Independent claim 16, as amended, recites similar elements to claim 1. Claim 16 states a nacelle having a strut to affix a generator as well as a shroud having a ring gear for driving at least one generator. Therefore, claim 16 patentably distinguishes over Bergey as well as Smith.

7. 35 U.S.C. 103(a) rejection of claims 12 and 17-20 as being unpatentable over Bergey, Jr. in view of WO 87/05666 as well as 35 U.S.C. 103(a) rejection of claims 12-13 as being unpatentable over Smith in view of WO 87/05666.

The Examiner rejects claims 12 and 17-20 as being obvious over Bergey, Jr. in view of WO 87/05666. Also, the Examiner also rejects claims 12-13 as being obvious over Smith in view of WO 87/05666.

The law requires:

To establish *prima facie* obviousness of a claimed invention, all the claim elements must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). (Manual of Patent Examining Procedure (MPEP) ¶ 2143.03).

The Examiner cites WO 87/05666 as disclosing a generator mounted on a strut that secures to the nacelle. Applicant respectfully traverses the rejection. The generator in WO 87/05666 mounts on top of a horizontal platform. (WO 87/05666, see Figure 3). The nacelle is located above the platform and not connected to the generators. The generators in WO 87/05666 do not suspend from or mount to the nacelle. The generators in WO 87/05666 mount to and are supported by the horizontal platform. (WO 87/05666, Abstract paragraph and see Figure 3).

Applicant states in independent claim 16, as amended, "the nacelle having a strut to affix a generator."

Also, applicant sets forth in independent claim 16, as amended, a shroud having a ring gear to drive the generator. As discussed above, neither Smith nor Bergey disclose or suggest this element.

Therefore, independent claim 16 patentably distinguishes over Bergey in view of WO 87/05666 as well as Smith in view of WO 87/05666 because no reference discloses the elements recited in claim 16.

Claim 17 depends from and includes the elements in claim 16. Independent claim 18 contains similar elements to claim 16.

Independent claim 18 states "the nacelle further including a support shaft extending therefrom; . . .[and] a generator incorporating a gear and being mounted on said support strut." Independent claim 18 patentably distinguishes over Bergey in view of WO 87/05666 as well as Smith in view of WO 87/05666 because no reference discloses or suggests the elements recited in claim 18. Claim 19 and new claim 22 depend from and include the elements in claim 18. Claims 12 and 20 have been cancelled without prejudice.

Independent claim 1, as amended, also states a nacelle having a strut to affix a generator as well as a shroud having a ring gear to drive the generator." Claim 13 depends from and includes the elements in claim 1. Therefore, claims 1, 16, and 17- 19 overcome the 35 U.S.C. 103(a) rejections for the reasons stated above.

8. 35 U.S.C. 103(a) rejection of claims 6-9 and 21 as being unpatentable over Smith in view of Enos as well as 35 U.S.C. 103(a) rejection of claims 1-2, 6-10, 12-14 and 16-19 as being unpatentable over WO 87/05666 in view of Enos.

The Examiner rejects claims 6-9 and 21 as being obvious over Smith in view of Enos. Also, the Examiner rejects claims 1-2, 6-10, 12-14 and 16-19 as being obvious over WO 87/05666 in view of Enos.

The law requires:

To establish *prima facie* obviousness of a claimed invention, all the claim elements must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). (Manual of Patent Examining Procedure (MPEP) ¶ 2143.03).

As discussed above, neither Smith, Bergey, nor WO 87/05666 disclose the elements stated in independent claims 1, 16, and 18. Applicants respectfully submit that Enos is completely silent on disclosing a wind turbine system that includes a nacelle having a strut to affix a generator. Nor does Enos disclose a shroud having a ring gear to drive that generator. Enos discloses an aeronautical propeller adapted for an aircraft that uses a pitch changing motor. (Enos Col. 1, Lns. 1-3 and Col.3, Lns. 1-2. Therefore, claims 1-2, 6-10, 13-14, 16-19, and 21 patentably distinguish over the Smith in view of Enos and Smith in view of Enos for the reasons discussed above.

9. 35 U.S.C. 103(a) rejection of claim 20 as being unpatentable over WO 87/05666 in view of Enos in view of Bergey.

The office action states claim 20 is obvious in view of WO 87/05666 in view of Enos in view of Bergey, Jr. Applicant cancels claim 20 without prejudice.

10. 35 U.S.C. 103(a) rejection of claim 20 as being unpatentable in view of WO 87/05666, Bergey, or Smith.

The office action states claim 15 is inherently obvious in view of WO 87/05666, Bergey, or Smith. As discussed above, neither WO 87/05666, Bergey, nor Smith disclose the elements stated in independent claim 1. Claim 15 depends upon and includes the elements of claim 1. For the same reasons set forth above with respect to claim 1, claim 15 is not obvious in view of WO 87/05666, Bergey, or Smith. Therefore, claim 15 patentably distinguishes over WO 87/05666, Bergey, or Smith because neither WO 87/05666, Bergey, nor Smith disclose the elements stated in independent claim 1.

New claims 22-26 are added to round out the coverage.

CONCLUSION

Applicants respectfully submit that the rejections and objections have been overcome. Applicants respectfully submit that claims 1-11, 13-19 and 21, as amended, and new claims 22-26 are in a condition for allowance. Applicants respectfully solicit allowance of claims 1-11, 13-19, 21, and 22-24.

If there are any additional charges, please charge Deposit Account No. 02-2666. If a telephone interview would in any way expedite the prosecution of the present application, the Examiner is invited to contact Michael J. Mallie at (408) 720-8300.

Respectfully submitted,

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VERSION OF SPECIFICATION AND CLAIMS WITH MARKINGS:

IN THE SPECIFICATION

Please substitute these paragraphs on page 2, lines 11-27.

[The housing is the subject of co-pending application Serial No. , entitled: and filed on .] The housing provides support for the bearings that carry the turbine rotor and the shroud/ring drive of the subject invention. The monocoque structure eliminates the bedplate mounting structure generally found in large wind turbines. The housing also protects any electronics and power conditioning equipment located at tower top. The shaft extension drives the shroud/ring gear of the subject invention, resulting in both cost and weight savings.

The tower is tilted or articulated to form an arched tower, permitting the turbine rotor to be placed in a higher velocity, low turbulence air stream with reduced wind shear gradient. [The tower configuration is the subject of co-pending application Serial No. ,entitled: ,and filed on .] Using an arched tower that rotates about its base accommodates the increased blade tip deflection. Drive train loads are reacted through the tubular monocoque housing that replaces both the traditional bedplate and the nacelle. In the embodiments shown and described herein the tower can be in the range of 100 meters in height.

Please substitute these paragraphs on page 5, lines 1-16.

The over all system design is shown in Fig. 1. Fig. 1 illustrates the [The] tower 10 and the housing 44 [are described in co-pending applications Serials Nos. and , incorporated by reference herein]. The subject invention is specifically directed to the ring/shroud 14 and the connection assembly thereof for the blades 16, 18 and 20 and the generator assembly 22. An enlarged front view of the ring/shroud 14 is shown in Fig. 2. The outer ring 24 is concentric with a hub 26 and is connected thereto via permanently mounted interior blades or other interconnecting structure 28, 30 and 32 (also see Fig. 3). The interior blades may be either fixed or variable pitch. In the preferred embodiment, the shroud includes a gear track or race 34 about its perimeter,

see Fig. 3. The track can be on the inner perimeter as shown in Figs. 3 and 5, or can be along the outer perimeter, as a matter of choice. In the preferred embodiment, one or more generators 36, 38 are mounted on struts 40 that extend radially outward from the nacelle 44. As is better shown in the enlarged fragmentary view Fig. 5 also looking generally in the same direction as Fig. 3. the drive shaft 39 of each generator includes a drive gear (or gears) 42 in driven relationship with the track 34 of the shroud ring 24.

IN THE CLAIMS:

Please cancel claims 12 and 20 without prejudice. Please amend claims 1, 11, 13, 16-18, and 21. Please add new claims 22-26.

1. (Amended) A shroud system for a wind turbine comprising:

a. a central hub;

b. a first connecting structure having a root portion and a tip portion, wherein said root portion is attached to the hub;

c. a shroud having an internal surface, [and] an external surface, and a ring gear to drive a generator, wherein the internal surface is attached to the tips of the connecting structure;

d. a second set of connecting structure having a root portion and a tip portion, wherein said root portion is attached in such a manner as to extend beyond the external surface of the shroud; and

e. a nacelle having a strut to affix the generator.

11. (Amended) The shroud system of claim 2, wherein the first set of blades is mounted in a fixed relationship with [the] a mounting post for providing a variable pitch blade.

13. (Amended) The shroud system of claim [12] 1, wherein the ring gear is on the internal surface of the shroud.

16. (Amended) A wind turbine comprising:

a. a tower;

b. a nacelle mounted on said tower;

c. a hub mounted for rotation on a shaft supported within the nacelle;

d. a plurality of first rotor blades, said blades having a root end and a tip end, wherein the first rotor blades or structures are attached at said root end to a hub and said hub being secured to said shaft extending from the nacelle, the nacelle having a strut to affix a generator;

e. a shroud having an internal surface and an external surface, wherein the internal surface of the shroud is attached to the tip ends of said first rotor blades or structures, the shroud having a ring gear for driving at least one generator; and

f. a plurality of second rotor blades, said blades having a root end and a tip end, wherein the root ends of the second rotor blades [are] attach[ed] to the external surface of the shroud [if] when the second rotor blades have a fixed pitch [fixed pitch or to a drive shaft if variable pitch.] and the root ends of the second rotor blades attach to a drive shaft when the second rotor blades have a variable pitch.

17. (Amended) The wind turbine of claim 16, further comprising:

[a. a strut or struts secured to the nacelle and extending radially outward from the nacelle;

b. a generator mounted on the strut and in alignment with the shroud;

c. .a ring gear on the shroud; and

d.] a driven gear on the generator and in engagement with the ring gear on the shroud.

18. (Amended) A wind turbine comprising:

a. a tower;

b. a nacelle having a support strut extending therefrom, said nacelle being mounted on said tower;

c. the nacelle further including a support shaft extending therefrom;

d. a generator incorporating a gear and being mounted on said support strut;

e. plurality of first rotor structures having a root end and a tip end, wherein the first rotor structures are attached at said root end to a hub and said hub being secured to said shaft extending from the nacelle;

f. a shroud having an internal surface and an external surface, wherein the internal surface of the shroud is attached to the tip ends of said first fixed pitch rotor structure and wherein said shroud further includes a ring gear for interfacing the [a] generator [incorporating a gear]; and

g. a plurality of second rotor structures having a root end and a tip end, wherein the root ends of the second rotor structures [are] attach[ed] to the external surface of the shroud [if] when the second rotor structures have a fixed pitch [fixed pitch or to a drive shaft if variable pitch].

21. (Amended) The shroud system of claim [8] 18, wherein the ring gear is on the external surface of the shroud.

22. (New) The wind turbine of claim 18, wherein the root ends of the second rotor structures attach to a drive shaft when the second rotor structures have a variable pitch.

23. (New) A wind turbine system comprising:

a hub;

a nacelle having a front end in the direction of the hub and an aft end; and

a housing attached to the nacelle at the aft end and containing one or more generator mounts and a stage of speed increasing gears.

24. (New) The wind turbine system of claim 23, wherein the housing further comprises a drive gear contained to drive at least one generator.

25. (New) The wind turbine system of claim 23, wherein the housing is completely closed.

26. (New) The wind turbine system of claim 23, wherein the housing has two or more generator mounts.